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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,386	01/11/2002	Melvin D. Frerking	08648.0001	8941

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EXAMINER	
NG, CHRISTINE Y	
ART UNIT	**PAPER NUMBER**
2616	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,386	FRERKING ET AL.	
	Examiner	Art Unit	
	Christine Ng	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10-14,20-25,29-32,38-43 and 49* is/are rejected.

7)☒ Claim(s) *5-9,15-19,26-28,33-37,44-48 and 50-52* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-4, 10-14, 20-25, 29-32, 38-43 and 49 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

2. Claim 24 is objected to because of the following informalities:

Claim 24 repeats lines 10-11 of claim 22.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4, 11, 12, 21, 30, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,650,688 to Acharya et al.

Referring to claims 1, 12, 30 and 40, Struhsaker discloses in Figure 2 a base station (Column 4, lines 21-24) for providing flexible data rate transmission in a telecommunications system comprising:

An interface (coder 32) operable to receive an incoming data stream (data bitstream 11). Refer to Column 4, lines 33-44.

A signal processor (mapper 34 and code multiplier unit 36) coupled to the

interface, the signal processor operable to:

Receive the incoming data stream (coded data bitstream 13) from the interface. Refer to Column 4, lines 41-44.

Select a chip rate (2.56 Msymbols/s).

Select a spreading factor (16).

Spread the incoming data stream into a spread data stream with a channelization Code (Walsh code). The signals 15,17 at 160 ksymbols/s are "spread by a factor of sixteen using a respective Walsh pseudo-random noise (PN) code spreading function to generate baseband signals at an effective chip rate of 2.56 Msymbols/s...". The initial data rate R_0 is equal to the chip rate R_1 divided by a spreading factor SPREAD: $R_0 = R_1/(N \times SPREAD)$. Refer to Column 5, lines 24-63.

A transmitter (transmitting antenna 50) coupled to the signal processor, the transmitter operable to receive the spread data stream from the signal processor and transmit the spread data stream over an air interface. Refer to Column 6, lines 62-67.

Struhsaker does not disclose the step of selecting an operating downlink chip rate from at least two chip rates independently of a receiving device, wherein a first chip rate of said at least two chip rates is equal to a fraction n/p of a second chip rate of said at least two chip rates, wherein said second chip rate comprises a standard chip rate.

Acharya et al disclose a mobile transceiver that is able to handle any of the four currently specified chip rates of 1.024 Mcps, 4.096 Mcps, 8.192 Mcps and 16.384 Mcps. As shown in Figure 13, the mobile transceiver includes an SRRC filter with a programmable architecture which enables the filter to be selectively operated with

different chip rates. A chip rate select signal 162 is provided to the multiplexer 152 to select one of the input signals (F_1, F_2, F_3, F_4) to become the output signal. Each input signal corresponds to one of the chip rates of 1.024 Mcps, 4.096 Mcps, 8.192 Mcps and 16.384 Mcps. Since a W-CDMA system supports all four chip rates, a mobile transceiver is made to support the four chip rates. The selected chip rate depends on the rate currently used by the system, and is independent of the receiving device. Furthermore, all four chip rates are standard chip rates. So if a second chip rate is 16.384 Mcps, a first chip rate of 8.192 Mcps is a fraction (1/2) of the second chip rate. Refer to Column 1, line 59 to Column 2, line 8; and Column 10, line 12 to Column 11, line 6. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of select an operating downlink chip rate from at least two chip rates independently of a receiving device, wherein a first chip rate of said at least two chip rates is equal to a fraction n/p of a second chip rate of said at least two chip rates, wherein said second chip rate comprises a standard chip rate. One would be motivated to do so in order to make the system more flexible by accommodating multiple chip rates.

Referring to claim 4, Struhsaker do not disclose wherein the signal processor is further operable to select the operating downlink chip rate from the at least two chip rates, wherein n/p is selected from ½, 2/5, 1/3, ¼, and 1/5.

Acharya et al disclose a mobile transceiver that is able to handle any of the four currently specified chip rates of 1.024 Mcps, 4.096 Mcps, 8.192 Mcps and 16.384 Mcps. All four chip rates are standard chip rates. If a first chip rate is 16.384 Mcps, a second

chip rate of 8.192 Mcps is a fraction (1/2) of the first chip rate. If a first chip rate is 16.384 Mcps, a second chip rate of 4.096 Mcps is a fraction (1/4) of the first chip rate. Refer to Column 1, line 59 to Column 2, line 8; and Column 10, line 12 to Column 11, line 6. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein the signal processor is further operable to select the operating downlink chip rate from the at least two chip rates, wherein n/p is selected from ½, 2/5, 1/3, ¼, and 1/5. One would be motivated to do so in order to make the system more flexible by accommodating multiple chip rates.

Referring to claims 11, 21 and 39, Struhsaker does not disclose a receiver coupled to the signal processor, the receiver operable to receive a second spread data stream from the air interface which has been transmitted at an operating uplink chip rate selected from one of the at least two chip rates, wherein the first of the chip rates is equal to a fraction, n/p, of the second of the chip rates, where n/p is selected from 1/2, 2/5, 1/3, 1/4, and 1/5.

Acharya et al disclose a mobile transceiver that is able to handle any of the four currently specified chip rates of 1.024 Mcps, 4.096 Mcps, 8.192 Mcps and 16.384 Mcps. All four chip rates are standard chip rates. If a first chip rate is 16.384 Mcps, a second chip rate of 8.192 Mcps is a fraction (1/2) of the first chip rate. If a first chip rate is 16.384 Mcps, a second chip rate of 4.096 Mcps is a fraction (1/4) of the first chip rate. Chip rates can apply to both uplink and downlink directions. Refer to Column 1, line 59 to Column 2, line 8; and Column 10, line 12 to Column 11, line 6. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made

to include a receiver coupled to the signal processor, the receiver operable to receive a second spread data stream from the air interface which has been transmitted at an operating uplink chip rate selected from one of the at least two chip rates, wherein the first of the chip rates is equal to a fraction, n/p, of the second of the chip rates, where n/p is selected from 1/2, 2/5, 1/3, 1/4, and 1/5. One would be motivated to do so in order to make the system more flexible by accommodating multiple chip rates.

5. Claims 2 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,650,688 to Acharya et al, and in further view of U.S. Patent No. 6,697,629 to Grilli et al.

Struhsaker and Acharya et al disclose that the at least two chip rates that are n/p fractions of each other, where n/p is selected from ½, 2/5, 1/3, ¼, and 1/5. If a first chip rate is 16.384 Mcps, a second chip rate of 8.192 Mcps is a fraction (1/2) of the first chip rate. If a first chip rate is 8.192 Mcps, a second chip rate of 4.096 Mcps is a fraction (1/2) of the first chip rate. If a first chip rate is 4.096 Mcps, a second chip rate of 1.024 Mcps is a fraction (1/4) of the first chip rate. Any of the 16.384 Mcps, 8.192 Mcps or 4.096 Mcps can be the basic chip rate. Refer to Column 1, line 59 to Column 2, line 8; and Column 10, line 12 to Column 11, line 6.

However, Struhsaker and Acharya et al do not disclose that the chip rates are 3.84 Mchips/second and 3.84 x (n/p) Mchips/second

Grilli et al disclose that 3.84 Mchips/sec is a basic chip rate for WCDMA systems. Refer to Column 5, lines 41-64 and Column 13, lines 35-51. Acharya et al also disclose a system that allows mobile transceivers to accommodate two or more potential chips

rates in a WCDMA system. Refer to Column 2, lines 6-8. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the at least two chip rates are 3.84 Mchips/second and 3.84 x (n/p) Mchips/second, where n/p is selected from ½, 2/5, 1/3, ¼, and 1/5. One would be motivated to do so in order for the system to support the basic WCDMA chip rate.

6. Claims 3, 13, 14, 22, 24, 25, 29, 31, 32, 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,650,688 to Acharya et al, and in further view of U.S. Patent No. 6,965,633 to Sun et al.

Referring to claim 3, Struhsaker discloses in Figure 2 a base station (Column 4, lines 21-24) for providing flexible data rate transmission in a telecommunications system comprising:

An interface (coder 32) operable to receive an incoming data stream (data bitstream 11). Refer to Column 4, lines 33-44.

A signal processor (mapper 34 and code multiplier unit 36) coupled to the interface, the signal processor operable to:

Receive the incoming data stream (coded data bitstream 13) from the interface. Refer to Column 4, lines 41-44.

Select a chip rate (2.56 Msymbols/s).

Select a spreading factor (16).

Spread the incoming data stream into a spread data stream with a channelization

Code (Walsh code). The signals 15,17 at 160 ksymbols/s are "spread by a factor of sixteen using a respective Walsh pseudo-random noise (PN) code spreading function to generate baseband signals at an effective chip rate of 2.56 Msymbols/s...". The initial data rate R_0 is equal to the chip rate R_1 divided by a spreading factor SPREAD: $R_0 = R_1/(N \times SPREAD)$. Refer to Column 5, lines 24-63.

A transmitter (transmitting antenna 50) coupled to the signal processor, the transmitter operable to receive the spread data stream from the signal processor and transmit the spread data stream over an air interface. Refer to Column 6, lines 62-67.

Struhsaker does not disclose the step of select an operating downlink chip rate from at least two chip rates.

Acharya et al disclose a mobile transceiver that is able to handle any of the four currently specified chip rates of 1.024 Mcps, 4.096 Mcps, 8.192 Mcps and 16.384 Mcps. As shown in Figure 13, the mobile transceiver includes an SRRC filter with a programmable architecture which enables the filter to be selectively operated with different chip rates. A chip rate select signal 162 is provided to the multiplexer 152 to select one of the input signals (F_1, F_2, F_3, F_4) to become the output signal. Each input signal corresponds to one of the chip rates of 1.024 Mcps, 4.096 Mcps, 8.192 Mcps and 16.384 Mcps. Since a W-CDMA system supports all four chip rates, a mobile transceiver is made to support the four chip rates. Refer to Column 1, line 59 to Column 2, line 8; and Column 10, line 12 to Column 11, line 6. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the step of select an operating downlink chip rate from at least two chip rates. One

would be motivated to do so in order to make the system more flexible by accommodating multiple chip rates.

Struhsaker also does not disclose wherein the signal processor is further operable to segment the incoming data stream into one of more frames having a desired number of slots, the desired number of slots variable in accordance with the selected chip rate.

Sun et al disclose that when the chip rate is 4.096 MHz, a frame has 16 time slots and when the chip rate is 3.84 MHz, a frame has 15 time slots. Refer to Column 4, lines 35-40. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein the signal processor is further operable to segment the incoming data stream into one of more frames having a desired number of slots, the desired number of slots variable in accordance with the selected chip rate. One would be motivated to do so in order to adjust the frame size according to the chip rate.

Referring to claims 13, 31 and 42, Struhsaker does not disclose segmenting the incoming data stream into one of more frames having a desired number of slots, the desired number of slots variable in accordance with the selected chip rate.

Sun et al disclose that when the chip rate is 4.096 MHz, a frame has 16 time slots and when the chip rate is 3.84 MHz, a frame has 15 time slots. Refer to Column 4, lines 35-40. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include segmenting the incoming data stream into one of more frames having a desired number of slots, the desired number of slots

variable in accordance with the selected chip rate. One would be motivated to do so in order to adjust the frame size according to the chip rate.

Referring to claims 14, 32 and 43, Struhsaker do not disclose wherein the stage of selecting further comprises selecting the operating downlink chip rate from the at least two chip rates, wherein n/p is selected from ½, 2/5, 1/3, ¼, and 1/5.

Acharya et al disclose a mobile transceiver that is able to handle any of the four currently specified chip rates of 1.024 Mcps, 4.096 Mcps, 8.192 Mcps and 16.384 Mcps. All four chip rates a standard chip rates. If a first chip rate is 16.384 Mcps, a second chip rate of 8.192 Mcps is a fraction (1/2) of the first chip rate. If a first chip rate is 16.384 Mcps, a second chip rate of 4.096 Mcps is a fraction (1/4) of the first chip rate. Refer to Column 1, line 59 to Column 2, line 8; and Column 10, line 12 to Column 11, line 6. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein the stage of selecting further comprises selecting the operating downlink chip rate from the at least two chip rates, wherein n/p is selected from ½, 2/5, 1/3, ¼, and 1/5. One would be motivated to do so in order to make the system more flexible by accommodating multiple chip rates.

Referring to claims 22 and 24, refer to the rejection of claims 1, 12, 30 and 40 and the rejection of claim 3. The transmitter 30 shown in Figure 2 by Struhsaker can be placed in a user equipment (Column 4, lines 21-24).

Referring to claim 25, refer to the rejection of claims 14, 32 and 43.

Referring to claim 29, refer to the rejection of claims 11, 21 and 39.

7. Claims 10, 20, 38 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,650,688 to Acharya et al, and in further view of U.S. Patent No. 6,539,047 to Moon.

Struhsaker does not disclose that the signal processor is further operable to generate a synchronization signal at the selected operating downlink chip rate, and then transmitter further operative to transmit the synchronization signal.

Moon discloses in Figure 1 a transmitter with a sync channel generator 120 that encodes an input sync channel signal and multiplies the encoded sync channel signal by a specific Walsh code 124 and then by a PN sequence 125. The resulting 80ms sync channel is used for system synchronization, all of which is performed at a chip rate of 1.2288 Mcps. Refer to Column 1, lines 39-59; Column 2, line 64 to Column 3, line 8; and Column 3, lines 34-67. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the signal processor is further operable to generate a synchronization signal at the selected operating downlink chip rate, and then transmitter further operative to transit the synchronization signal. One would be motivated to do so for the mobile station to acquire synchronization with the base station at the chip rate.

8. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,650,688 to Acharya et al in view of U.S. Patent No. 6,965,633 to Sun et al, and in further view of U.S. Patent No. 6,697,629 to Grilli et al. Refer to the rejection of claims 2 and 41.

Allowable Subject Matter

9. Claims 5-9, 15-19, 26-28, 33-37, 44-48 and 50-52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng
May 3, 2006

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